REMARKS

Claims 1-13 are pending in the application. Claims 1-13 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,561,527 to Krone-Schmidt et al. (hereinafter "Krone-Schmidt") and U.S. Patent 6,193,936 to Gardner et al. (hereinafter "Gardner").

An embodiment of the Applicant's invention shown in Figs. 1-3 comprises an arrangement for synchronized simultaneous vertical ejection of aerosol spray to form an aerosol plume, illuminating the plume with a planar shaped laser beam (28 or 38), and taking an image of the cross-sectional slice or planar image formed by intersection of the plume and the laser beam with the digital camera 12 for a subsequent computer analysis. The acquired data provides useful information relating to plume characteristics, including divergence and uniformity. See page 7, lines 25-29 and page 8, lines 1-4.

Krone-Schmidt discusses an optical sensing apparatus for use with a CO_2 jet spray nozzle that sprays a plume. This apparatus comprises a light source 11 that provides a light beam 11a which is detected by a photodiode 12 after passing through the plume 15 and filters 13 and 14. The level of the photodiode's output voltage corresponds to different types of CO_2 snow plumes. See col. 3, lines 4-46.

Gardner discusses a laser pyrolysis apparatus for thermal conversion of materials in an inert atmosphere. As shown in Fig. 2, the reactants are injected into a chamber 200 through an opening 206. A laser 108 generates a beam 222 that enters the chamber 200 through a window 212, intersects the flow of reactants at the reaction zone 224, and exits through a window 214. The products of pyrolysis are removed from the chamber through an opening 232 using a pump 274.

Krone-Schmidt is not concerned with illuminating the plume 15 along a geometric plane. It discusses simply passing light through the plume to a photodiode 12 which detects the amount of light attenuated by the plume. Krone-Schmidt does not discuss illuminating the plume along at least one geometric plane. Further, the detection provided in the Krone-Schmidt has no relation to the image data representative of an interaction between the illuminator and the aerosol spray plume along the at least one geometric plane, as claimed in the present invention. Gardner

adds no teaching or suggestions for the features lacking in Krone-Schmidt regarding illumination of the plume along at least one geometric plane.

Because Claims 1 and 2 each contain a limitation absent from Krone-Schmidt and Gardner, either explicitly or impliedly, then Claims 1 and 2 are not obvious over Krone-Schmidt and Gardner.

Claims 3-13 are dependent on independent Claim 2, and therefore contain all the elements of Claim 2. For the foregoing reasons relating to the patentability of Claim 2, each of the Claims 3-13 are also not obvious over Krone-Schmidt and Gardner.

Therefore, for the above-stated reasons, the Applicant respectfully requests reconsideration of the rejections under 35 U.S.C. § 103(a).

Claims 2 and 7 have been amended for clarity and consistency.

Supplemental Information Disclosure Statement

A Supplemental Information Disclosure Statement is being filed concurrently herewith. Entry of the IDS is respectfully requested.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

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